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(71)**Applicant**

Identification Number000002185

NameSony Corp.

Address6-7-35, Kitashinagawa, Shinagawa-ku, Tokyo

(72)**Inventor(s)**

NameMasami Sekiguchi

Address6-7-35, Kitashinagawa, Shinagawa-ku, Tokyo Inside of Sony Corp.

(72)**Inventor(s)**

NameYamamoto **

Address6-7-35, Kitashinagawa, Shinagawa-ku, Tokyo Inside of Sony Corp.

(74)**Attorney**

Patent Attorney

NameHidemori Matsukuma

(57) Abstract

Objects of the InventionRecord of the image by which a sound is not accompanied is prevented and always good record is made to be performed.

Elements of the InventionA signal from the 1st terminal of the matrix circuit 9 is supplied to one stationary contact of the change over switch 10, and a signal from the 2nd terminal is supplied to one stationary contact of the change over switch 11. Furthermore, a demodulation signal from the demodulator 8 of a sub audio signal (SAP) is supplied to a stationary contact of another side of the change over switch 10. A signal which shows that a sub audio signal (SAP) from the demodulator 8 is transmitted is supplied to the control circuit 12. On the other hand, a setpoint signal of whether to record a sub audio signal (SAP) is supplied to the control circuit 12 through the terminal 13. Only when record of a sub audio signal (SAP) is set up with a control signal from this control circuit 12 and transmission of a sub audio signal (SAP) is distinguished, the change over switches 10 and 11 are switched to the stationary-contact side of another side.

Claim(s)

Claim 1In VTR with which a fundamental sound voice signal transmitted in a monophonic recording or a stereo and a different sub audio signal from this fundamental sound voice signal are received, and the 1st and 2nd audio signals are recorded, VTR which recorded the above-mentioned sub audio signal as the 1st audio signal of the above when it was distinguished that a discriminating means of existence of transmission of the above-mentioned sub audio signal and a setting-out means of record of the above-mentioned sub audio signal are formed, record of the above-mentioned sub audio signal is set up, and there is transmission of the above-mentioned sub audio signal.

Detailed Description of the Invention**0001**

Industrial Application This invention relates to suitable VTR for record of U.S. television broadcasting etc.

0002

Description of the Prior Art For example, in U.S. television broadcasting, the fundamental sound voice signal of a monophonic recording or a stereo and a different sub audio signal (SAP: Second Audio Program) from this fundamental sound voice signal are transmitted. That is, the sound usually according a **fundamental sound voice signal** to English is transmitted in a monophonic recording or a stereo (two channels), and sounds, such as Spanish and French, are transmitted to a sub audio signal (SAP).

0003 On the other hand, in VTR of for example, an 8-mm video method, only record of the 1st and 2nd audio signals what is called by an AFM method is performed with the device by which normal use is carried out. Therefore, when an above-mentioned fundamental sound voice signal is transmitted in a stereo (two channels) and the sub audio signal (SAP) is transmitted, all these audio signals cannot be recorded.

0004 By the way, when the sub audio signal (SAP) is limited to transmission of Spanish, French, etc. as mentioned above, to the usual viewer, the sub audio signal (SAP) is completely unnecessary. To the viewer using Spanish, French, etc. to it, the fundamental sound voice signal in English is more nearly unnecessary.

0005 Then, when the switch which sets up record of a sub audio signal (SAP) is formed and record of a sub audio signal (SAP) is set up with this switch from the former, recording only a sub audio signal (SAP) is performed. However, in this method, when the sub audio signal (SAP) is not transmitted, record of an audio signal will be only a noise and the image by which a sound is not accompanied will be recorded. For this reason, there was a problem of being misunderstood with failure of a voice system at the time of reproduction.

0006 In VTR of what is called a beta (registered trademark) method and a VHS (registered trademark) method, the audio signal by a fixed head is recordable besides record of the 1st and 2nd audio signals by an AFM method. Therefore, since all the above-mentioned audio signals are recordable, such a problem does not arise.

0007

Problem(s) to be Solved by the Invention As for a problem which it is going to solve, there is a possibility that the image by which a sound is not accompanied with the conventional device may be recorded, and it may be misunderstood with failure of a voice system at the time of reproduction.

0008

Means for Solving the Problem A fundamental sound voice signal (FM demodulators 6 and 7) to which this invention is transmitted in a monophonic recording or a stereo, In VTR with which a different sub audio signal (demodulator 8) from this fundamental sound voice signal is received, and the 1st and 2nd audio signals (FM modulators 15 and 16) are recorded, A discriminating means (demodulator 8) of existence of transmission of the above-mentioned sub audio signal and a setting-out means (terminal 13) of record of the above-mentioned sub audio signal are formed, When it is distinguished that record of the above-mentioned sub audio signal is set up, and there is transmission of the above-mentioned sub audio signal (control circuit 12), it is VTR which was made to record the above-mentioned sub audio signal as the 1st audio signal of the above (switches 10 and 11).

0009

Function Since the audio signal which distinguishes the existence of transmission of a sub audio signal and is recorded is controlled according to this, the image by which a sound is not accompanied is not recorded and always good record can be performed.

0010

Example In drawing 1, the signal from the antenna 1 is supplied to the tuner 2, and desired television broadcasting tunes in. This tuned-in TV signal is supplied to the image intermediate frequency circuit 3. And the taken-out video signal is supplied to the recording processing circuit 4 of a video signal, and this processed signal is supplied to the adding machine 5.

0011 A voice intermediate frequency signal is taken out from the image intermediate frequency circuit 3, this voice intermediate frequency signal is supplied to FM demodulator 6, and a monaural sound signal or the sum signal (L+R) of the right and left of a stereo gets over. Furthermore, the signal from FM demodulator 6 is supplied to FM demodulator 7, and the

difference signal (L-R) of the right and left of a stereo gets over. The signal from FM demodulator 6 is supplied to the demodulator 8 of a sub audio signal (SAP), and a sub audio signal (SAP) gets over.

0012The demodulation signal from these FM demodulators 6 and the demodulation signal from FM demodulator 7 are supplied to the matrix circuit 9. The signal which shows that the difference signal (L-R) from FM demodulator 7 is transmitted is supplied to the matrix circuit 9. And when the difference signal (L-R) is not transmitted, the demodulation signal from FM demodulator 6 is taken out from both 1st and 2nd terminals as it is, and. When the difference signal (L-R) is transmitted, the audio signal (L, R) of the right and left of a stereo is taken out independently of the 1st and 2nd terminals, respectively.

0013The signal from the 1st terminal of this matrix circuit 9 is supplied to one stationary contact of the change over switch 10. The signal from the 2nd terminal of the matrix circuit 9 is supplied to one stationary contact of the change over switch 11. Furthermore, the demodulation signal from the demodulator 8 of a sub audio signal (SAP) is supplied to the stationary contact of another side of the change over switch 10. The stationary contact of another side of the change over switch 11 is made into a no connection.

0014The signal which shows that the sub audio signal (SAP) from the demodulator 8 is transmitted is supplied to the control circuit 12. On the other hand, the setpoint signal of whether to record a sub audio signal (SAP) is supplied to the control circuit 12 through the terminal 13. The change over switches 10 and 11 are operated with the control signal from this control circuit 12. And only when record of a sub audio signal (SAP) is set up and transmission of a sub audio signal (SAP) is distinguished, the change over switches 10 and 11 are switched to the stationary-contact side of another side.

0015The signal acquired by the traveling contact of these switches 10 and 11 is supplied to the matrix circuit 14. And the sum signal (L+R) of the signal from the switches 10 and 11 is taken out from the 1st terminal, respectively, and the difference signal (L-R) of the signal from the switches 10 and 11 is taken out from the 2nd terminal. When the control signal from the control circuit 12 is supplied to the matrix circuit 14, and record of a sub audio signal (SAP) is set up and transmission of a sub audio signal (SAP) is distinguished, operation of the matrix circuit 14 is suspended and the signal from the switch 10 is taken out from the 1st terminal as it is.

0016The signal from the 1st terminal of this matrix circuit 14 is supplied to 1st FM modulator 15 that is 1.5 MHz, and the signal from the 2nd terminal of the matrix circuit 14 is supplied to 2nd FM modulator 16 that is 1.7 MHz. The signal which shows that the difference signal (L-R) from FM demodulator 7 is transmitted, and the signal by which the control signal from the control circuit 12 was reversed with the inverter 17 are supplied to AND circuit 18, and this and output is supplied to 2nd FM modulator 16. When a difference signal (L-R) is transmitted by this, record of the sub audio signal (SAP) is not set up or transmission of a sub audio signal (SAP) is not distinguished, 2nd FM modulator 16 is made into an operating state. The signal from these FM modulators 15 and 16 is added with the adding machine 19, and is supplied to the adding machine 5. And the signal from this adding machine 5 is supplied to the head 21 through the switch 20.

0017When this device supports the PCM recording method of an 8-mm video method, for example, the signal from the 1st and 2nd terminals of the matrix circuit 9 is supplied to the PCM signal processing circuit 22. And the processed signal is supplied to the switch 20 and recorded on PCM signal recording area.

0018Therefore, in this device, the relation between the existence of setting out of record of a sub audio signal (SAP) and the mode (state) of the signal transmitted comes to be shown in the next table 1.

Table 1

For drawings please refer to the original document.

0019In this way, since the audio signal recorded by distinguishing the existence of transmission of a sub audio signal (SAP) (demodulator 8) is controlled according to the above-mentioned device (circuit 12), the image by which a sound is not accompanied is not recorded and always good record can be performed.

0020That is, in an above-mentioned device, if record of a sub audio signal (SAP) is set up through the terminal 13, when the sub audio signal (SAP) is transmitted, this sub audio signal (SAP) is recorded, and when the sub audio signal (SAP) is not transmitted, a fundamental

sound voice signal will be recorded. When record of the sub audio signal (SAP) is not set up, only a fundamental sound voice signal is always recorded.

0021Therefore, when the sub audio signal (SAP) is limited to transmission of Spanish, French, etc., and the usual televiewer does not set up record of a sub audio signal (SAP), only a fundamental sound voice signal is always recorded. When the televiewer using Spanish, French, etc. sets up record of a sub audio signal (SAP) to it, When the sub audio signal (SAP) is transmitted, this sub audio signal (SAP) is recorded, and when the sub audio signal (SAP) is not transmitted, a fundamental sound voice signal comes to be recorded.

0022In an above-mentioned device, when the device supports the PCM recording method of for example, an 8-mm video method, it is made to carry out this PCM record only record of a fundamental sound voice signal. This is for a sub audio signal (SAP) maintaining the compatibility of that the zone does not have the quality which is narrowly equivalent to PCM record, and the device already carried out from the first.

0023An above-mentioned device can be applied also to VTR of what is called a beta method and a VHS method, and can improve the expedient nature on use of such VTRs by this.

0024

Effect of the InventionThe audio signal which distinguishes the existence of transmission of a sub audio signal and is recorded is controlled by this invention.

Therefore, the image by which a sound is not accompanied cannot be recorded and always good record can be performed now.

Industrial ApplicationThis invention relates to suitable VTR for record of U.S. television broadcasting etc.

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Brief Description of the Drawings

Drawing 1 It is a lineblock diagram of an example of VTR by this invention.

Description of Notations

- 1 Antenna
 - 2 Tuner
 - 3 Image intermediate frequency circuit
 - 4 The recording processing circuit of a video signal
 - 5 and 19 Adding machine
 - 6, 7 FM demodulators
 - 8 The demodulator of a sub audio signal (SAP)
 - 9, 14 matrix circuits
 - 10, 11 change over switches
 - 12 Control circuit
 - 13 The terminal of the setpoint signal of whether to record a sub audio signal (SAP)
 - 15, 16 FM modulators
 - 17 Inverter
 - 18 AND circuit
 - 20 Switch
 - 21 Head
 - 22 PCM signal processing circuit
-

Drawing 1

For drawings please refer to the original document.

For drawings please refer to the original document.

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(71)出願人 000002185

ソニー株式会社

東京都品川区北品川6丁目7番35号

(72)発明者 関口 正美

東京都品川区北品川6丁目7番35号 ソニ

ー株式会社内

(72)発明者 山元 徹

東京都品川区北品川6丁目7番35号 ソニ

ー株式会社内

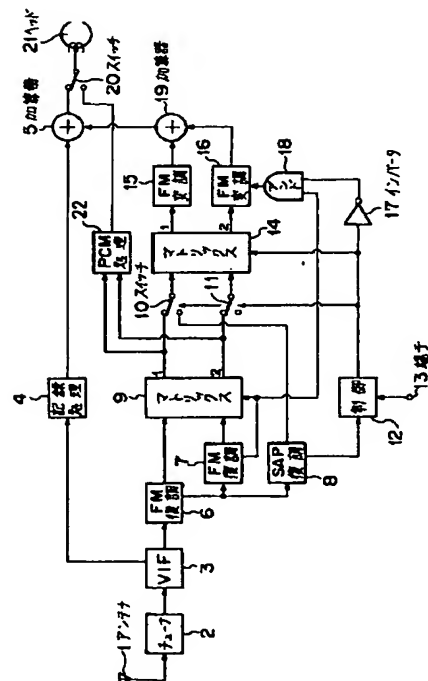
(74)代理人 弁理士 松隈 秀盛

(54)【発明の名称】 VTR

(57)【要約】

【目的】 音声の伴わない映像の記録を防止し、常に良好な記録が行われるようにする。

【構成】 マトリクス回路9の第1の端子からの信号が切り換えスイッチ10の一方の固定接点に供給され、第2の端子からの信号が切り換えスイッチ11の一方の固定接点に供給される。さらに副音声信号 (SAP) の復調器8からの復調信号が切り換えスイッチ10の他方の固定接点に供給される。また復調器8からの副音声信号 (SAP) が送信されていることを示す信号が制御回路12に供給される。一方、副音声信号 (SAP) を記録するか否かの設定信号が端子13を通じて制御回路12に供給される。この制御回路12からの制御信号で副音声信号 (SAP) の記録が設定され且つ副音声信号 (SAP) の送信が判別されている時のみ、切り換えスイッチ10、11が他方の固定接点側に切り換えられる。



【特許請求の範囲】

【請求項1】 モノラルまたはステレオで送信される主音声信号と、この主音声信号とは異なる副音声信号とが受信され、第1及び第2の音声信号が記録されるVTRにおいて、

上記副音声信号の送信の有無の判別手段と、上記副音声信号の記録の設定手段とが設けられ、上記副音声信号の記録が設定され、上記副音声信号の送信の有ることが判別されたときは、上記副音声信号を上記第1の音声信号として記録するようにしたVTR。

【発明の詳細な説明】**【0001】**

【産業上の利用分野】 本発明は、米国のテレビ放送等の記録に好適なVTRに関するものである。

【0002】

【従来の技術】 例えば米国のテレビ放送においては、モノラルまたはステレオの主音声信号と、この主音声信号とは異なる副音声信号(SAP: Second Audio Program)とが送信されるようになっていゝる。すなわち主音声信号は通常英語による音声モノラルまたはステレオ(2チャンネル)で送信されると共に、副音声信号(SAP)にはスペイン語、フランス語等の音声送信される。

【0003】 一方、例えば8mmビデオ方式のVTRにおいては、通常使用される装置ではいわゆるAFM方式による第1及び第2の音声信号の記録のみが行われるようになっていゝる。従って上述の主音声信号がステレオ(2チャンネル)で送信されると共に、副音声信号(SAP)が送信されている場合には、これらのすべての音声信号を記録することができない。

【0004】 ところで上述のように副音声信号(SAP)がスペイン語、フランス語等の送信に限定されている場合には、通常の視聴者には副音声信号(SAP)は全く不用である。それに対してスペイン語、フランス語等を用いる視聴者には英語による主音声信号の方が不用である。

【0005】 そこで従来から、副音声信号(SAP)の記録を設定するスイッチを設けて、このスイッチで副音声信号(SAP)の記録が設定されたときは、副音声信号(SAP)のみを記録することが行われている。しかしながらこの方法では、副音声信号(SAP)が送信されていないときには、音声信号の記録はノイズのみとなり、音声の伴わない映像が記録されてしまう。このため再生時に音声系の故障と誤解されるなどの問題があった。

【0006】 なおいゝゆる β (登録商標)方式、VHS(登録商標)方式のVTRにおいては、AFM方式による第1及び第2の音声信号の記録の他に、固定ヘッドによる音声信号の記録を行うことができる。従って上述のすべての音声信号を記録することができるので、このよ

うな問題が生じることはない。

【0007】

【発明が解決しようとする課題】 解決しようとする問題は、従来の装置では音声の伴わない映像が記録されて再生時に音声系の故障と誤解される恐れがあるというものである。

【0008】

【課題を解決するための手段】 本発明は、モノラルまたはステレオで送信される主音声信号(FM復調器6、7)と、この主音声信号とは異なる副音声信号(復調器8)とが受信され、第1及び第2の音声信号(FM変調器15、16)が記録されるVTRにおいて、上記副音声信号の送信の有無の判別手段(復調器8)と、上記副音声信号の記録の設定手段(端子13)とが設けられ、上記副音声信号の記録が設定され、上記副音声信号の送信の有ることが判別されたとき(制御回路12)は、上記副音声信号を上記第1の音声信号として(スイッチ10、11)記録するようにしたVTRである。

【0009】

【作用】 これによれば、副音声信号の送信の有無を判別して記録される音声信号を制御しているので、音声の伴わない映像が記録されることがなく、常に良好な記録を行うことができる。

【0010】

【実施例】 図1において、アンテナ1からの信号がチューナ2に供給されて所望のテレビ放送が選局される。この選局されたテレビ信号が映像中間周波回路3に供給される。そして取り出された映像信号が映像信号の記録処理回路4に供給され、この処理された信号が加算器5に供給される。

【0011】 また映像中間周波回路3から音声中間周波信号が取り出され、この音声中間周波信号がFM復調器6に供給されて、モノラル音声信号またはステレオの左右の和信号(L+R)が復調される。さらにFM復調器6からの信号がFM復調器7に供給されて、ステレオの左右の差信号(L-R)が復調される。またFM復調器6からの信号が副音声信号(SAP)の復調器8に供給されて、副音声信号(SAP)が復調される。

【0012】 これらのFM復調器6からの復調信号とFM復調器7からの復調信号がマトリクス回路9に供給される。またFM復調器7からの差信号(L-R)が送信されていることを示す信号がマトリクス回路9に供給される。そして差信号(L-R)が送信されていないときはFM復調器6からの復調信号がそのまま第1及び第2の端子の両方から取り出されると共に、差信号(L-R)が送信されているときはステレオの左右の音声信号(L、R)がそれぞれ第1及び第2の端子から独立に取り出される。

【0013】 このマトリクス回路9の第1の端子からの信号が切り換えスイッチ10の一方の固定接点に供給さ

れる。またマトリクス回路9の第2の端子からの信号が切り換えスイッチ11の一方の固定接点に供給される。さらに副音声信号(SAP)の復調器8からの復調信号が切り換えスイッチ10の他方の固定接点に供給される。なお切り換えスイッチ11の他方の固定接点は無接続にされる。

【0014】また復調器8からの副音声信号(SAP)が送信されていることを示す信号が制御回路12に供給される。一方、副音声信号(SAP)を記録するか否かの設定信号が端子13を通じて制御回路12に供給される。この制御回路12からの制御信号で切り換えスイッチ10、11が操作される。そして副音声信号(SAP)の記録が設定され且つ副音声信号(SAP)の送信が判別されている時のみ、切り換えスイッチ10、11が他方の固定接点側に切り換えられる。

【0015】これらのスイッチ10、11の可動接点に得られる信号がマトリクス回路14に供給される。そしてそれぞれスイッチ10、11からの信号の和信号(L+R)が第1端子から取り出されると共に、スイッチ10、11からの信号の差信号(L-R)が第2端子から取り出される。また制御回路12からの制御信号がマトリクス回路14に供給され、副音声信号(SAP)の記録が設定され且つ副音声信号(SAP)の送信が判別されている時は、マトリクス回路14の動作が停止されて、スイッチ10からの信号がそのまま第1端子から取り出される。

	SAP記録オン		SAP記録オフ	
	1.5M	1.7M	1.5M	1.7M
モノラル	モノラル	—	モノラル	—
モノラル+SAP	SAP	—	モノラル	—
ステレオ	L+R	L+R	L+R	L+R
ステレオ+SAP	SAP	—	L+R	L+R

(—はキャリアなし)

【0019】こうして上述の装置によれば、副音声信号(SAP)の送信の有無を判別(復調器8)して記録される音声信号を制御(回路12)しているので、音声の伴わない映像が記録されることがなく、常に良好な記録を行うことができるものである。

【0020】すなわち上述の装置において、端子13を通じて副音声信号(SAP)の記録が設定されると、副音声信号(SAP)が送信されているときはこの副音声信号(SAP)が記録され、副音声信号(SAP)が送信されていないときは主音声信号が記録される。また副音声信号(SAP)の記録が設定されていないときは、常に主音声信号のみが記録される。

【0021】従って副音声信号(SAP)がスペイン語、フランス語等の送信に限定されている場合には、通常の視聴者は副音声信号(SAP)の記録を設定しない

【0016】このマトリクス回路14の第1端子からの信号が1.5MHzの第1のFM変調器15に供給され、マトリクス回路14の第2端子からの信号が1.7MHzの第2のFM変調器16に供給される。またFM復調器7からの差信号(L-R)が送信されていることを示す信号と、制御回路12からの制御信号がインバータ17で反転された信号とがアンド回路18に供給され、このアンド出力が第2のFM変調器16に供給される。これによって差信号(L-R)が送信され、且つ副音声信号(SAP)の記録が設定されていないかまたは副音声信号(SAP)の送信が判別されていない時に、第2のFM変調器16が動作状態にされる。これらのFM変調器15、16からの信号が加算器19で加算されて加算器5に供給される。そしてこの加算器5からの信号がスイッチ20を通じてヘッド21に供給される。

【0017】なおこの装置が、例えば8mmビデオ方式のPCM記録方式に対応している場合には、マトリクス回路9の第1及び第2の端子からの信号がPCM信号処理回路22に供給される。そして処理された信号がスイッチ20に供給されて、PCM信号記録エリアに記録される。

【0018】従ってこの装置において、副音声信号(SAP)の記録の設定の有無と、送信されている信号のモード(状態)との関係は、次の表1に示すようになる。

【表1】

ことによって、常に主音声信号のみが記録される。それに対してスペイン語、フランス語等を用いる視聴者は副音声信号(SAP)の記録を設定することによって、副音声信号(SAP)が送信されているときはこの副音声信号(SAP)が記録され、副音声信号(SAP)が送信されていないときは主音声信号が記録されるようになる。

【0022】なお上述の装置において、装置が例えば8mmビデオ方式のPCM記録方式に対応している場合には、このPCM記録は主音声信号の記録のみ行われるようにされている。これは元々副音声信号(SAP)は帯域が狭くPCM記録に相当する品質を有していないことと、すでに実施されている装置との互換性を保つためである。

【0023】また上述の装置は、いわゆるβ方式、VH

S方式のVTRにも適用することができ、これによってこれらのVTRの使用上の便宜性を高めることができる。

【0024】

【発明の効果】この発明によれば、副音声信号の送信の有無を判別して記録される音声信号を制御しているので、音声の伴わない映像が記録されることがなく、常に良好な記録を行うことができるようになった。

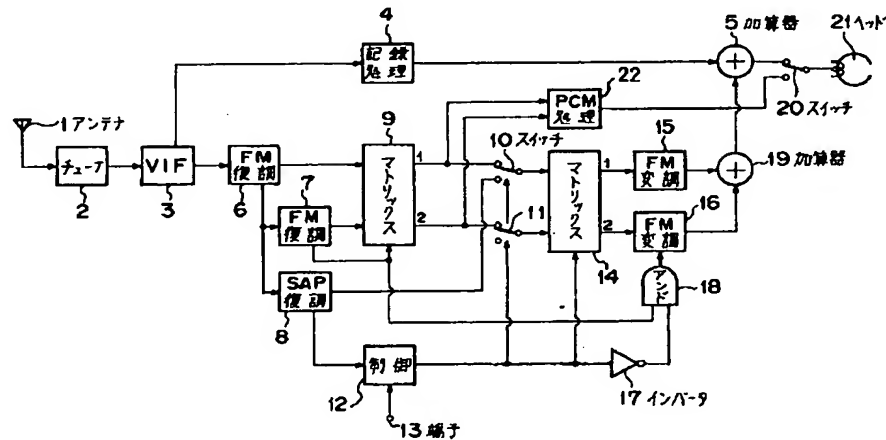
【図面の簡単な説明】

【図1】本発明によるVTRの一例の構成図である。

【符号の説明】

- | | |
|---------------|-------------------------------|
| 1 アンテナ | 5、19 加算器 |
| 2 チューナ | 6、7 FM復調器 |
| 3 映像中間周波回路 | 8 副音声信号(SAP)の復調器 |
| 4 映像信号の記録処理回路 | 9、14 マトリクス回路 |
| | 10、11 切り換えスイッチ |
| | 12 制御回路 |
| | 13 副音声信号(SAP)を記録するか否かの設定信号の端子 |
| | 15、16 FM変調器 |
| | 17 インバータ |
| | 18 アンド回路 |
| | 20 スイッチ |
| | 21 ヘッド |
| | 22 PCM信号処理回路 |

【図1】



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(71)Applicant : SONY CORP

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(72)Inventor : **SEKIGUCHI MASAMI**
YAMAMOTO TORU

(54) VTR

(57)Abstract:

PURPOSE: To prevent an image without a sound from recording and to always record excellently.

CONSTITUTION: A signal from the first terminal of a matrix circuit 9 is supplied to the fixed contact of one side of a changeover switch 10, and the signal from the second terminal is supplied to the fixed contact of one side of the changeover switch 11. Further, a demodulation signal from the demodulator 8 of a sub audio signal (SAP) is supplied to the fixed contact of the other side of the changeover switch 10. Further, the signal indicating that the sub audio signal (SAP) from the demodulator 8 is transmitted is supplied to a control circuit 12. On the other hand, a signal setting whether the sub audio signal (SAP) is recorded or not is supplied to the control circuit 12 through the terminal 13. Only when, by the control signal from the control circuit 12, the recording of the sub audio signal (SAP) is set and the transmission of the sub audio signal (SAP) is discriminated, the changeover switches 10, 11 is switched to the fixed contact of the other side.

